

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

---

*Ex parte* JANNE LAAKSO, RIKU JANTTI, and MIKA RINNE

---

Appeal 2006-2445  
Application 09/249,216  
Technology Center 2600

---

Decided: December 12, 2007

---

Before JOSEPH F. RUGGIERO, LANCE LEONARD BARRY, and  
SCOTT R. BOALICK, *Administrative Patent Judges*.

RUGGIERO, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134 from the Final Rejection of claims 1-10, 13, 15, and 16. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm-in-part and enter a new rejection pursuant to 37 C.F.R. § 41.50(b).

Appellants' claimed invention relates to the power control of a mobile system having at least one mobile station and at least one base station in which the transmit power of more than one bearer is determined at a time.

A control function is formed at least partly on a quantity representative of a fast fading effect with the power of more than one bearer being controlled based at least partly on the fast fading effect quantity. (Specification 4-6).

Claim 1 is illustrative of the invention and reads as follows:

1. A power control method in a mobile system based at least partly on a spread spectrum technique and having at least one mobile station and at least one base station, characterised in that the transmit power of more than one bearer is determined at a time with the aid of the method, and that the method comprises steps, in which

- a control function is formed at least partly on the basis of a quantity which at least partly represents the fast fading experienced by at least one bearer, and

- the control function is calculated in order to determine new output power values of said more than one bearer.

The Examiner relies on the following prior art references to show unpatentability:

Haartsen	US 5,491,837	Feb. 13, 1996
Reed	US 5,574,984	Nov. 12, 1996
Pelin	US 5,937,014	Aug. 10, 1999 (filed Mar. 27, 1997)
Persson	US 6,067,446	May 23, 2000 (filed Jul. 11, 1996)

Claims 1-10, 13, 15, and 16, all of the appealed claims, stand rejected under 35 U.S.C. § 103(a). As evidence of obviousness, the Examiner offers

the combination of Persson and Pelin with respect to claims 1-9, 13, and 16; adds Reed to the basic combination with respect to claim 10; and adds Haartsen to the basic combination with respect to claim 15.

Rather than reiterate the arguments of Appellants and the Examiner, reference is made to the Briefs and Answer for the respective details. Only those arguments actually made by Appellants have been considered in this decision. Arguments which Appellants could have made but chose not to make in the Briefs have not been considered and are deemed to be waived [see 37 C.F.R. § 41.37(c)(1)(vii)].

## ISSUES

- (1) Under 35 U.S.C § 103(a), with respect to appealed claims 1-9, 13, and 16, would one of ordinary skill in the art at the time of the invention have found it obvious to combine Persson and Pelin to render the claimed invention unpatentable?
- (2) Under 35 U.S.C § 103(a), with respect to appealed claim 10, would the ordinarily skilled artisan have found it obvious to modify the combination of Persson and Pelin by adding Reed to render the claimed invention unpatentable?
- (3) Under 35 U.S.C § 103(a), with respect to appealed claim 15, would the ordinarily skilled artisan have found it obvious to modify the combination of Persson and Pelin by adding Haartsen to render the claimed invention unpatentable?

## PRINCIPLES OF LAW

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. *See In re Fine*, 837 F.2d 1071, 1073 (Fed. Cir. 1988). In so doing, the Examiner must make the factual determinations set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). “[T]he examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability.” *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). Furthermore, “‘there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness’ . . . [H]owever, the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR Int’l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007)(quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

## ANALYSIS

With respect to the Examiner’s 35 U.S.C. § 103(a) rejection of appealed independent claims 1 and 16 based on the combination of Persson and Pelin, Appellants assert (Br. 4-7; Reply Br. 1-3) that the Examiner has failed to set forth a *prima facie* case of obviousness since a valid line of reasoning for the proposed combination of references has not been established. After reviewing the arguments of record from Appellants and the Examiner, we are in general agreement with Appellants’ position as stated in the Briefs.

The Examiner proposes to modify the bearer channel power control communication system of Persson by applying the fast fading teachings of Pelin. According to the Examiner (Answer 3-4), since Persson discloses that the power control function is utilized to adjust the power levels associated with mobile stations to respond to changing needs of the mobile stations such as compensating for path loss, the incentive exists to look for other factors that might influence a need for power level adjustment such as the fast fading effect disclosed by Pelin.

In our view, however, the radio signal communication system described by Pelin has little relevance to the mobile station power level control system of Persson and, at best, provides only a disclosure that the fast fading effect is known to be a factor resulting in degradation of signal quality. We do agree with the Examiner (Answer 4) that the Examiner's stated position should not be interpreted as incorporating Pelin's specific disclosed technique of utilizing antenna diversity into the system of Persson to compensate for fast fading but, rather, only that Pelin teaches that the fast fading effect is a factor to be considered in addressing signal quality degradation in radio communication systems.

Nonetheless, there must be some valid rationale provided by the Examiner for the skilled artisan to apply the fast fading effect teachings of Pelin to the power level control system of Persson. We simply find nothing in the disclosure of Pelin to support the Examiner's conclusion of obviousness as to the claimed invention based on the combination of Persson and Pelin. As argued by Appellants (Br. 5), Pelin is directed (col. 1, ll. 13-55) to solving problems related to the effects of fast fading and time dispersion on the quality of received signals which have already been sent.

Persson, on the other hand, is directed (col. 3, ll. 45-55) to compensating for interference caused by the changing operating characteristics of mobile stations by increasing or decreasing the transmit power of the mobile stations to thereby improve the signal quality of signals to be sent.

With the above discussion in mind, it is our view, given the disparity of problems addressed by the applied prior art references, and the differing solutions proposed by them, any attempt to apply the fast fading effect teachings of Pelin to the power level control communication system of Persson in the manner proposed by the Examiner could only come from Appellants' own disclosure.

In view of the above discussion, since we are of the opinion that the proposed combination of the Persson and Pelin references set forth by the Examiner does not support the obviousness rejection, we do not sustain the Examiner's stated rejection of independent claims 1 and 16, nor of claims 2-9 and 13 dependent thereon.

We also do not sustain the Examiner's obviousness rejection of dependent claim 15 in which the Haartsen reference has been added to the combination of Persson and Pelin to address the bearer transmission allowance feature of the claim. We find nothing, however, in the disclosure of the Haartsen reference which would overcome the innate deficiencies of the Persson and Pelin references as discussed *supra*.

Turning to a consideration of the Examiner's 35 U.S.C. § 103(a) rejection of dependent claim 10 based on the combination of Persson, Pelin, and Reed, we note that, while we found Appellants' arguments to be persuasive with the respect to the previously discussed Examiner's rejections of appealed claims 1-9, 13, 15, and 16, we reach the opposite

conclusion with respect to the rejection of claim 10. In addressing the language of dependent claim 10, the Examiner has applied the maximum and minimum bearer power value teachings of Reed (col. 1, ll. 45-59) to the proposed combination of Persson and Pelin.

Our independent review of the disclosure of Reed, however, reveals that, to whatever extent the Examiner is relying upon the teachings of Pelin to provide a disclosure of the effects of fast fading on signal quality degradation, this disclosure is cumulative to what is already disclosed in Reed. For example, Reed discloses (col. 2, ll. 1-5) a higher signal-to-noise ratio is required for a moving mobile unit because of the “Rayleigh fading of the signal due to the movement of the user ....”<sup>1</sup>

Aside from this basic teaching, it is also apparent that Reed provides a disclosure of distinct relevance to the present claimed invention, i.e., Reed discloses that measurements of a fast fading effect are used to adjust the level of the power transmitted from a base unit to a subscriber unit. As illustrated in Reed’s Figures 1 and 8 and described, for example, at column 3, lines 15-30 and column 6, line 30 through column 7, line 16 of Reed, the measured fast fading characteristic at a subscriber receiver is used to direct a controller to adjust the power transmitted from the base to the subscriber receiver to improve system performance.

As recognized by Appellants (Br. 5), Persson discloses a system for adjusting the power levels of multiple mobile stations within a cell to maintain the desired signal interference ratios (SIR) among the stations in the cell. In our view, the improved signal-to noise system performance taught by Reed as resulting from an inclusion of fast fading effect factors on

---

<sup>1</sup> As indicated at column 2, lines 30-33 of Reed, fast variations of the Rayleigh fading effect is sometimes called “fast fading.”

power level determination would have been recognized and appreciated by the skilled artisan as an obvious enhancement to the power level control system of Persson.

In view of the above discussion, since the collective teachings of the Persson and Reed references establish a prima facie case of obviousness which has not been overcome by any convincing arguments from Appellants, the Examiner's 35 U.S.C § 103(a) rejection of dependent claim 10 is sustained.<sup>2</sup>

1 REJECTION UNDER 37 CFR § 41.50(b)

We make the following new ground of rejection using our authority under 37 CFR § 41.50(b). Independent claims 1 and 16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Persson and Reed. In making this rejection, we make reference to our earlier discussion in which we sustained, based on the combination of Persson and Reed, the Examiner's obviousness rejection of dependent claim 10.

As set forth by the Examiner (Answer 3-4) and recognized by Appellants (Br. 4-5), Persson discloses a power control method and system in which the transmit power of more than one bearer is determined at a time but does not disclose that the power control function is formed using a fast fading effect factor. As we discussed earlier, however, Reed discloses (Figures 1 and 8; col. 3, ll. 15-30; and col. 6, l. 30 through col. 7, l. 16) that using a fast fading effect measurement in the determination of a power

---

<sup>2</sup> The Board may rely on less than all of the references applied by the Examiner in an obviousness rationale without designating it as a new ground of rejection. *In re Bush*, 296 F.2d 491, 496 (CCPA 1961); *In re Boyer*, 363 F.2d 455, 458 n.2 (CCPA 1966).



control function will improve system performance. In view of the teachings of Reed, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize a fast fading characteristic as factor in determining a power control function in the system of Persson.

We further note that, although the combination of Persson and Reed has been applied only against independent claims 1 and 16, this is not to be taken as an indication of the patentability of the other claims on appeal. In any resumption of the prosecution of this application before the Examiner, the Examiner should consider the applicability of the applied prior art as well as the other prior art of record and any other discovered prior art, to all of the appealed claims 1-10, 13, 15, and 16.

## CONCLUSION

In view of the foregoing, we reverse the Examiner's 35 U.S.C. § 103(a) rejection of claims 1-9, 13, 15, and 16, but we sustain the Examiner's 35 U.S.C. § 103(a) rejection of claim 10. A new rejection of independent claims 1 and 16 under 35 U.S.C. § 103(a) is entered pursuant to 37 C.F.R. § 41.50(b). 37 C.F.R. § 41.50(b) provides [a] new ground of rejection pursuant to this paragraph shall not be considered final for judicial review.

37 C.F.R. § 41.50(b) also provides that the Appellants, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of the appeal as to the rejected claims:

- (1) *Reopen prosecution.* Submit an appropriate amendment of the claims so rejected or new evidence relating to the claims so rejected,

or both, and have the matter reconsidered by the examiner, in which event the proceeding will be remanded to the examiner....

(2) *Request rehearing.* Request that the proceeding be reheard under § 41.52 by the Board upon the same record....

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

Appeal 2006-2445  
Application 09/249,216

AFFIRMED-IN-PART  
37 C.F.R. § 41.50(b)

BARRY, *Administrative Patent Judge, concurring.*

I concur with my colleagues and write separately with an additional observation. The Appellants admit that determining and adjusting the power levels of plural "mobile stations within the base station area" (Spec. 2) was old and well known in the "PRIOR ART." (Fig. 1.) As explained by Judge Ruggiero, moreover, Reed discloses that using a measurement of the fast fading effect in the determination of a power control function improves system performance. (Figs. 1 and 8; col. 3, ll. 15-30; col. 6, l. 30 - col. 7, l. 16.) In view of the disclosure of Reed, I believe it would have been obvious to one of ordinary skill in the art at the time of the invention to include a fast fading characteristic as a factor in determining the power values of mobile stations within a base station area.

In an *ex parte* appeal, however, the Board "is basically a board of review we review . . . rejections made by patent examiners." *Ex parte Gambogi*, 62 USPQ2d 1209, 1211 (BPAI 2001). Therefore, I leave it to the Examiner to decide whether to make such a rejection in any further examination.

Appeal 2006-2445  
Application 09/249,216

eld

CLARENCE A GREEN  
PERMAN & GREEN  
425 POST ROAD  
FAIRFIELD CT 06430